

Claims

1. A dispensing pump for a viscous liquid comprising:  
a cylinder;  
5 a piston mounted for reciprocation within said cylinder;  
an inlet for admitting liquid to be dispensed into said cylinder;  
a check valve arranged selectively to open and  
10 close said inlet opening;  
said piston having a dispensing passage in fluid communication with said cylinder and with a dispensing valve;  
wherein said pump further comprises a cut-off valve  
15 arranged selectively to open and close fluid communication between the piston dispensing passage and the cylinder as the piston reciprocates within the cylinder.
- 20 2. A pump as claimed in claim 1 wherein the cut-off valve comprises a sliding valve member which is arranged to reciprocate within the dispensing cylinder so as selectively to open and close one or more openings in the dispensing piston.
- 25 3. A pump as claimed in claim 2 wherein the openings in the piston are formed in a side wall of the piston, and the valve member slidably engages an outer surface of the piston.
- 30 4. A pump as claimed in claim 2 ~~or 3~~ wherein the piston is provided with a pair of axially spaced shoulders so as to limit the axial movement of the valve member thereon.
- 35 5. A pump as claimed in ~~any of claims 2 to 5~~ wherein the cut-off valve member comprises a radially outer wall

for engaging the inner surface of the cylinder and a radially inner wall for engaging the piston.

5 6. A pump as claimed in claim 5 wherein the inner and outer walls are connected by a radially extending web.

7. A pump as claimed in <sup>claim 1</sup> ~~any preceding claim~~ wherein the check valve comprises a ball valve comprising a ball received upon a valve seat.

10 8. A pump as claimed in claim 7 wherein the ball is retained by a spring.

15 9. A pump as claimed in claim 8 wherein the ball is retained by a return spring for the dispensing piston.

10. A pump as claimed in claim 9 wherein the spring locates over the end of the dispensing piston.

20 11. A pump as claimed in claim 8 ~~/ 9 or 10~~ wherein the spring is formed with a variable diameter so as to retain the ball adjacent the opening.

25 12. A pump as claimed in claim 8 ~~/ 9, 10 or 11~~ wherein the spring is configured and arranged such that during the return stroke of the dispensing piston the ball is maintained in the inlet opening until the cut-off valve closes.

30 13. A pump as claimed in <sup>claim 1</sup> ~~any preceding claim~~ wherein the dispensing valve is a self-sealing valve.

14. A pump as claimed in claim 13 wherein the valve is an elastomeric valve.

35 15. A pump as claimed in <sup>claim 1</sup> ~~any preceding claim~~ comprising an air vent which allows air to enter a reservoir

receiving the pump around the pump piston.

5 16. A dispenser for viscous liquids comprising a reservoir for the liquid to be dispensed and a dispensing pump as claimed in any preceding claim arranged to dispense liquid from the reservoir.

10 17. A dispenser as claimed in claim 16 wherein the dispensing pump is mounted to an outlet of the reservoir.

15 18. A dispenser as claimed in claim 16 ~~or 17~~ wherein the reservoir is housed in a housing for attachment to a supporting surface.

19. A dispenser as claimed in claim 16 ~~or 17~~ wherein the reservoir is free standing.

20 20. A dispenser as claimed in <sup>claim 16</sup> ~~any of claims 16 to 19~~ wherein the reservoir is unvented.

21. A dispenser as claimed in <sup>claim 16</sup> ~~any of claims 16 to 19~~ wherein the reservoir is vented.